Exploring Ways to Enhance FAFSA Efficiency:

The Federal Methodology: Is It a Good Measure of Ability to Contribute Toward Educational Expenses?

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Overview

The Federal Methodology (FM), the formula through which the federal government determines students' eligibility for federal student aid, is the target of criticism both because it is complicated and opaque and because it does not accurately account for all of the circumstances that households face. But there are trade-offs between simplicity and precision. A simpler system will less accurately account for individual circumstances.

A better system would distinguish between two distinct functions the FM now serves: (a) ranking low- and moderate-income households to distribute Federal Pell Grants, which form the foundation of the aid that brings college into reach for many students, and (b) measuring financial capacity as the basis for allocating aid from institutions, states, and other sources to fill in the gaps between what students and families can contribute, federal grants, and the full cost of attendance.

The first function—distributing Pell Grants—should involve a simple formula that generates reliable, predictable amounts of aid for students with very limited resources. The second function requires a more nuanced formula that can generate a reliable ranking of households and reasonable approximations of the resources they can be expected to contribute to financing higher education. These estimates form the basis for determining financial need—the amount of supplementary resources students require to be able to cover all college expenses.

Measuring ability to pay is by definition a subjective process. It is easy to say that households with very limited resources have no ability to contribute to college education. If they cannot pay for basic food and housing, they have no discretionary funds with which to pay for anything that is not a necessity of life. But even in this most basic case, defining exactly what constitutes necessities is not so easy. In reality, personal circumstances and preferences vary so much that any line drawn will be too high for some and too low for others. Once the issue is priorities, as opposed to sustaining life, the subjectivity becomes even clearer. Should a family save for a larger home where three children do not have to share a bedroom or put money aside for college? Should an annual bonus go to paying tuition, piano lessons for an aspiring young musician, or replacing an aging car? Is it reasonable for a family to take a vacation abroad and still expect financial aid for college?

Nonetheless, some method for ranking households in order to allocate financial aid is a prerequisite for an equitable college financing system that provides larger subsidies for those in more constrained financial circumstances. The FM is the result of efforts to develop an exact index of something that is inherently imprecise. It will never be perfect, but improving it deserves attention.

After a brief review of the history of the federal need analysis system, this paper addresses the basic assumptions underlying FM and then focuses on how changes to a few specific provisions could increase the equity of the formula. The focus is on improving the formula for measuring ability to pay with the understanding that this formula is not the best way to allocate Pell Grants, which should be based on a much simpler system.

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The overall guiding principles for this discussion are that the need analysis system should:

- Foster vertical equity, providing higher levels of support to those with the least resources;

- Foster horizontal equity, treating students in similar financial circumstances similarly; and

- Be as simple and predictable as possible.

Key strategies for adhering to these principles include:

- Separating the determination of Pell eligibility from the need analysis formula for other sources of aid;

- Moving away from the "snapshot" approach to FM by considering multiple years of income and treating families with the same number of children similarly;

- Providing more access to aid for working independent students without dependents;

- Reevaluating and systematizing the derivation of formula elements, such as the allowances protecting some income and assets considered in the calculation of expected family contribution; and

- Addressing assets more comprehensively.

The Evolution of Need Analysis

Histories of the need analysis system generally begin in the early 1950s, when John Munro of Harvard University, concerned about the unsystematic way selective colleges and universities distributed their financial aid, collaborated with representatives of other institutions to develop a logical formula. Financial aid professionals worked with the College Board to develop the College Scholarship Service with the goal of centralizing and rationalizing the financial aid eligibility process. The formal process of calculating an "expected family contribution" (EFC) began with a focus on how institutions with resources allocated their aid to students with limited ability to pay.

When the federal government introduced Pell Grants in 1972, Congress developed its own EFC. The amount of a Pell Grant was equal to the maximum Pell Grant minus the student's EFC, which was based on student and family income and assets, family size, the number of family members in college, and some unusual expenses such as medical care. Many colleges required that in addition to completing the Pell Grant application, students also complete an additional, more detailed form such as the one offered by the College Board's College Scholarship Service.

In 1974, the National Task Force on Student Aid Problems (the Keppel Task Force), which included representatives of institutions and organizations involved with financial aid, developed the Uniform Methodology to standardize how institutions allocated their aid. With the Higher Education Amendments of 1986, Congress modified its system, modeling the Congressional Methodology (CM) on the Uniform Methodology. CM introduced different formulas for dependent students, independent students without dependents, and independent students with dependents. The system included a simplified needs test, excluding assets for the lowest-income aid applicants. Because the CM was written into law, updates and modifications became part of a political process.

In 1992, Congress integrated the Pell formula with the CM, yielding the Federal Methodology (FM). This formula excluded family homes and small farms, narrowing the gap between the eligibility of low-income families and middle-income families who owned these assets. It also included the automatic-zero EFC for households meeting specified criteria. Congress also eliminated the minimum student contribution, designed to ensure that all students pay some portion of their expenses, to allow zero EFCs for students who would receive the maximum Pell Grant under the new, single methodology for awarding federal aid. The small business exclusion was added in 2005.

Later changes excluded sources of untaxed income such as social assistance benefits, the Earned Income Tax Credit, the Child Tax Credit, and untaxed Social Security benefits from being factored into EFC calculations.[1] Since 2016, the formula has been based on "prior-prior" year data—aid for the 2020-21 academic year is now based on 2018 income instead of 2019 income.

Reducing Complexity: Different Purposes, Different Approaches

Much of the criticism of FM comes from observers concerned about the complex process facing low-income students who rely on Pell Grants to be able to enroll in college. Numerous analyses have demonstrated that a much simpler formula would have minimal impact on the distribution of Pell Grants while potentially increasing awareness of available aid and participation in the program.[2] Separating the formula for Pell eligibility from the formula measuring ability to pay for the purpose of allocating other forms of financial aid would be a return to an earlier practice. The application process would not have to be complicated, given the growing practice of transferring data from the IRS and the options for online customized data collection. Combining the two purposes—Pell and other aid—seemed to simplify the system, but over time it has become clear that the complex formula, which makes it difficult for students to apply for Pell Grants and to predict their eligibility, is a barrier to access.

Virtually no dependent students from families with incomes of $100,000 or higher receive Pell Grants. In contrast, half of the dependent students from families with incomes of $200,000 or higher attending one institution full time for the full year in 2015–16 received institutional grant aid. Eight percent of these students and 11% of those from families with incomes between $150,000 and $199,999 received state grants. Grants from private sources, some of which are based on financial need, also reach these levels of the income distribution. Another way of looking at the differences across grant sources is to note that 86% of dependent Pell Grant recipients are from families with incomes below $50,000, compared with 62% of state grant recipients, 37% of institutional grant recipients, and 36% of private grant recipients (Table 1).

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[1] Lumina Foundation and Institute for Higher Education Policy, *Form and Formula: How the Federal Government Distributes Aid to Students,* (2015), https://www.luminafoundation.org/files/resources/form-and-formula-viewing-guide.pdf.

[2] See Susan Dynarski and Judith Scott-Clayton, "The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics." *National Tax Journal,* 59, no. 2, (2016) 319–356; Susan Dynarski, and Judith Scott-Clayton, "College Grants on a Postcard: A Proposal for Simple and Predictable Federal Student Aid," Discussion Paper 2007-01, (Washington, DC: The Hamilton Project, 2007), https://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/College_Grants_on_a_Postcard-_A_Proposal_for_Simple_and_Predictable_Federal_Student_Aid_Brief.pdf; Sandy Baum, Kathleen Little, Jennifer Ma, and Anne Sturtevant, *Simplifying Student Aid: What It Would Mean for States,* (College Board and Lumina Foundation, 2012), https://pdfs.semanticscholar.org/3bad/68402e1077b376494985aaf0aec2f30772a8.pdf; Kim Reuben, Sarah Gault, and Sandy Baum, *Simplifying Federal Student Aid: An Overview of Eight Plans,* (Washington, DC: Urban Institute, 2015), https://www.urban.org/research/publication/simplifying-federal-student-aid-overview-eight-plans.

Table 1: Dependent Students' Grant Aid by Parents' Income, 2015–16

Share of dependent students attending one institution full time full year receiving grant aid

	Pell Grant	State grant	Institutional grant	Private grant
Less than $50,000	90%	53%	45%	16%
$50,000-$99,999	25%	32%	52%	20%
$100,000-$149,999	0%	15%	49%	19%
$150,000-$199,999	0%	11%	50%	18%
$200,000 or more	0%	8%	51%	16%

Distribution of all dependent grant recipients by parents' income

	Pell Grant	State grant	Institutional grant	Private grant
Less than $50,000	86%	62%	37%	36%
$50,000-$99,999	14%	25%	29%	29%
$100,000-$149,999	0%	8%	18%	19%
$150,000-$199,999	0%	2%	8%	8%
$200,000 or more	0%	2%	8%	7%
Total	100%	100%	100%	100%

Source. National Postsecondary Student Aid Study 2016, Power Stats.

It is time to move to a simple formula for Pell eligibility while maintaining a more detailed formula that can more accurately differentiate among families with higher levels of income and assets than those who qualify for Pell Grants. As long as most data are available from IRS forms, this distinction need not complicate the application process for low-income students. Only applicants with more complex financial circumstances would be required to provide additional information

The following discussion of improving the measurement of ability to pay assumes that a simpler system based on a small number of data elements would apply to Pell eligibility, which does not actually depend on a measure of ability to pay since Pell is a foundation program. It is the first aid packaged for students and is not designed to meet full financial need based on all of the expenses that students must cover while they are in college. Additional sources of aid layered on top of Pell should serve this purpose—and will continue to require more information to determine an equitable distribution.

The FM is currently used to determine eligibility for most state grant aid and for a significant amount of institutional grant aid, both of which extend much farther up the income scale than Pell Grants. A very simple allocation system is unlikely to be able to successfully differentiate among households with more complicated financial circumstances. A reasonably detailed system for ranking households is necessary to ensure a method for awarding these types of aid that is as equitable as possible.

That said, in addition to the tradeoffs between equity and simplicity, there are fundamental questions about whether any formula can actually determine how much households in different circumstances and with different priorities can "afford" to pay for college. Many of the parameters are, of necessity, judgment calls. How much income do families need to cover necessities? More affluent families spend much more than others on food, clothing, and housing—the basic necessities. They use their discretionary income for all kinds of things that others do not even consider buying.

The terminology "expected family contribution" causes some of the frustration with the methodology. Most students and families don't think they can contribute the amount that pops out of the FM formula. Moreover, most are asked to contribute even more than that—out of a combination of loans, additional work, or other sources—because very few colleges and universities meet the full documented need of all of their students.

In reality, the EFC is a financial aid index. It ranks students according to the amounts the system expects them to finance on their own. This ranking is clearly not perfect. If independent students without dependents are treated too harshly, if geographical differences in the cost of living are not adequately accounted for, or if the spacing of children creates inequities across families because of the more generous provisions for families with more than one child in college at the same time, some students with similar EFCs may struggle more than others to pay college bills.

But there has to be a ranking system to decide which students have priority in the distribution of need-based aid. And abandoning the idea of estimating ability to pay would mean abandoning the concepts of meeting need and unmet need.

The Snapshot Approach

A critical issue not addressed in any of the iterations of the need analysis system is that it looks at a snapshot of a household at one point in time without asking about the circumstances leading up to this time. Need analysis has always taken students and families as they are, looking at recent annual income and existing assets, if any. It does not ask for an earnings history or question why some families have accumulated assets while others in similar financial circumstances have not. This approach limits FM's ability to accurately measure households' financial strength.

Economists looking at the system have frequently criticized this short-term perspective. College is an investment that can rarely be paid for out of current income. Families should expect to pay out of past, present, and future income, saving when possible and borrowing when necessary. A longer-term measure of income would provide a much better indicator of families' true capacity to pay. A family whose income rose dramatically in the year on which the EFC is based does not have the same financial strength as one who has had a similarly high level of income for many years. If two families have had the same income paths over time, but one scrimped and saved for college while the other spent every penny that came in, the first family will have assets that increase their EFC. The need analysis system recognizes only actual assets—not the potential assets of the family that failed to save.

A more realistic measure of a family's ability to pay would look at income over a longer period of time. The optimal system would rely on data directly from the IRS and would come closer to looking at financial capacity over the years leading up to the time of college enrollment. It would continue to rely on the judgment of financial aid professionals to modify the approach when appropriate.

Adjusting for the Number in College Creates Inequities

The snapshot approach also generates inequitable treatment of families of the same size with children spaced differently. The FM calculates a family's EFC and then divides it across the number of children in college during the year for which the aid is requested. The logic for this number-in-college adjustment is that the system is based only on a picture of the household in the one year.[3] The reasoning is that if this is the amount of money a family can come up with for the college year, that will be their capacity regardless of how many of their children require support.

This approach creates clear horizontal inequities. A family putting two children through college faces the same lifetime expenses whether their children are twins or are four years apart. But the family with twins will be expected to contribute much less than the other family.

If we think of college as an investment that must be paid for over time, the logic for the current adjustment is weakened even further. If, for example, families pay for four years of college over a 12-year period through savings, paying out of current income, and borrowing, a family with two children will need 24 years of such funds. They can condense these reductions from their annual budgets into a shorter time frame, but then they will be making bigger sacrifices each year. Whether the family has twins or two children four years apart, the total price of college would be essentially the same. It is not easy to justify asking one family to make their payments twice as large as another family with the same income.

Some proposals for developing simple Pell eligibility tables link the Pell amount to family size, without regard to the timing of siblings' college enrollment. A similar approach in the EFC formula would increase the equity of aid allocations.

Dependency Status

The current FM treats students quite differently depending on their family situations. FM uses three different formulas for students determined by their dependency status. Undergraduate students are considered dependent if they are under the age of 24 unless they fit into one of the exception categories, including being married, having dependents of their own, being in the military or a veteran, or being an orphan or ward of the court. The EFC for dependent students depends on both their own financial resources and those of their parents.

For independent students, whose parents are not included in the need analysis formula, the amounts of the expected contributions depend on whether the students have dependents of their own. In 2017–18, when half of all Pell recipients were from households with incomes of $20,000 or less; this was the case for 88% of independent students without dependents, 48% of independent students with dependents, and 38% of dependent students.[4]

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[3] The income and the number in college are not for the same year. For example, aid for 2020-21 will be based on income for 2018 and the number in college in 2020-21. The earlier-year income is used as an estimate of income during the year the student is in college.

[4] U.S. Department of Education, *Pell Grant End of Year Report 2017–18,* 2019, Table 8, https://www2.ed.gov/finaid/prof/resources/data/pell-data.html.

Within these dependency categories, the share of students with low incomes who receive Pell is similar. For example, in 2015–16, the share of federal aid applicants with incomes of $20,000 or less who received Pell Grants was 84% of independent students without dependents, 86% of independent students with dependents, and 94% of dependent students. However, among those with incomes between $20,001 and $40,000, only 36% of independent aid applicants without dependents received Pell Grants, compared with 85% of independent students with dependents and 91% of dependent students (Table 2).

Evaluating these differences requires considering the underlying logic. Parents of dependent students have many responsibilities in addition to supporting and educating their children. It is reasonable to expect those who have the capacity to do so to save for college and to contribute out of current earnings, but a significant fraction of their current earnings must go to support themselves and any other dependents.

Table 2: Share of FAFSA Filers Receiving Pell Grants by Income and Dependency Status, 2015–16

Adjusted gross income	All	Dependent	Independent without dependents	Independent with dependents
$20,000 or less	88%	94%	84%	86%
$20,001 – $40,000	81%	91%	36%	85%
Above $40,000	24%	22%	NA	63%

Source. National Postsecondary Student Aid Study, 2016.

Setting the Income Protection Allowance

The FM includes an "income protection allowance" (IPA) that shields a fixed amount of income—depending on the students' dependency category—from consideration in calculating the EFC. The system taxes the income beyond that level at a higher rate for independent students without dependents other than a spouse than for other students.

Historically the IPA was based on a basic living allowance developed by the Bureau of Labor Statistics and updated for increases in the Consumer Price Index. The idea is not that this is the amount families need to live on, with the remaining income available for college. Rather, it is the after-tax income level below which households cannot afford to make any contribution at all to the cost of education. There is no one right answer to the question of the appropriate level of the IPA. Should it correspond to a constant (inflation-adjusted) dollar amount, allowing households the same basic necessities year after year? Should it be adjusted for relative living standards, corresponding to the income level at a fixed percentile of the income distribution? Similar questions apply to the determination of the federal poverty guidelines.

This IPA is subtracted from income, along with allowances for taxes (federal income taxes, state taxes, and Social Security taxes) and an employment expense allowance for single parents and two-earner families, with a share of the remaining smaller "available income" considered available for paying for college. In 2020–21, marginal tax rates on available income for parents of dependent students and independent students with dependents other than a spouse were 22% for those with incomes beyond allowances of $17,000 or less; 34% for those with available incomes between $25,701 and $30,100; and 47% for those whose incomes exceed allowances by $34,501 or more. In contrast, the tax rate on available income for independent students without dependents is 50%.

Suppose a single independent student has an IPA of $10,640 in 2020–21 and is expected to contribute 50% of any available income. If the student has a child, the EFC will fall significantly. The student will not only get a significantly higher income protection allowance but will also have a much lower assessment rate on available income.

The FM treats independent students with dependents similarly to parents of dependent students. These students have more of their incomes protected through the IPA than similar-size families with dependent college students, and the assessment rates on available income are the same. In other words, they are not expected to contribute larger shares of their incomes and assets to paying for their own education than their parents would be. It is not at all clear that this is equitable. It would seem appropriate that paying for their own education would be a higher priority. These students are investing in themselves with the expectation that their incomes will increase as a result of their education. They will be able to live at a higher standard of living later and save for retirement after they finish college. Parents, however, have no such expectation for the impact of their children's education.

On the other hand, the system treats independent students without dependents harshly. Their EFCs increase by 50 cents for every dollar of after-tax income they earn beyond a low IPA. Differences in earnings among independent students without dependents—at least in the same geographical areas—are likely due as much to work effort as to earnings capacity. Aside from creating a strong disincentive to work more and earn more, the high share of earnings going to increased contributions and likely reductions in aid eligibility makes it very difficult for many of these students to make ends meet. The current system makes it virtually impossible for independent students without dependents to significantly reduce their reliance on loans by working additional hours.

When a student turns 24, marries, or has a child, parental income no longer plays a role in the FM. In addition, the IPA against the student's own income increases. It is probably reasonable to treat adults above a certain age differently, but there is no magic about the age of 24. Similarly, there are likely to be differences of opinion as to whether parents' resources should be excluded simply because the student gets married. Is this a valid reason for transferring responsibility for financing college from the parents to the taxpayer?

Are there feasible alternatives to the current approach to dependency categories? The first question is under what circumstances parental resources should be part of the assessment of ability to pay. Ignoring these resources for all students would mean abandoning the concept of parental responsibility for their children's education and ignoring differences in family background, a sharp departure from American tradition and a major barrier to targeting aid to the students who need it most.

It might be more reasonable to argue that the resources of parents of undergraduate students should count no matter how old the students are. But given that 27% of undergraduate students are age 30 or over,[5] it is difficult to imagine requiring all of their parents to provide financial information.

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[5] National Center for Education Statistics, *Digest of Education Statistics 2018,* (Washington, DC, U.S. Department of Education, n.d.): Table 303.45, https://nces.ed.gov/programs/digest/.

Nonetheless, is not unreasonable to be concerned about students from relatively affluent families who are suddenly eligible for additional aid because they take a long time to get through college or decide to get married. Some proposals for simplifying the federal aid system would require students to complete the FAFSA before they begin college and base aid for the duration of their programs on this information. With this system, dependency status could change only after some specified number of years—perhaps six or eight—or under unusual circumstances.

Other Elements in the Formula

Ignoring Significant Assets Diminishes Distinctions Between Families

One of the longstanding controversies about the need analysis system is whether it should rely solely on income or include assets and, if so, which assets. The current formula excludes assets for both dependent students and independent students with dependents whose family incomes are below $50,000. It asks others only for information on cash, savings, and checking accounts; net worth of investments other than the family home; and some business and farm assets. Congress removed home equity—the largest asset for many families—from the formula in 1992 amid concerns that rising home prices did not put any extra money into the pockets of homeowners. This issue is an example of the tension between ranking families and estimating how much cash they can come up with. There is no doubt that a family with an income of $60,000 a year and $300,000 in home equity is in stronger financial circumstances than a similar family with the same income that does not own a home. Ignoring this difference is unfair to the renter.

Home ownership rates range from 38% in the lowest family income quintile to 84% in the highest quintile; 40% of black households and 72% of white-non-Hispanic households own homes (Figure 1).[6] Excluding home equity narrows the apparent gap in financial resources between those closer to the top and those closer to the bottom, concealing significant differences in ability to finance a college education.

Moreover, counting money in the bank but ignoring home equity means that a family that pays down their mortgage before applying for aid, transferring money from cash to home equity, can reduce their EFC. A strong need analysis system minimizes the opportunities to game the system and the incentives to change behavior simply for the purpose of maximizing aid eligibility. Failure to meet these challenges creates an inefficient and inequitable system.

Measuring household wealth may be difficult. But ignoring this wealth is inequitable. Annual income is a poor predictor of wealth. According to data from the Census Bureau, in 2015, 29% of households in the lowest income quintile had zero or negative net worth, but 21% had $100,000 or more. Among those in the middle income quintile, 33% had net worth below $25,000; 27% had net worth of $250,000 or more.[7]

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[6] US Census Bureau, "Wealth and Asset Ownership for Households, by Type of Assets and Selected Characteristics 2015," *Wealth and Asset Ownership*, 2020, Table 2, https://www.census.gov/data/tables/2015/demo/wealth/wealth-asset-ownership.html.

[7] Ibid, Table 1.

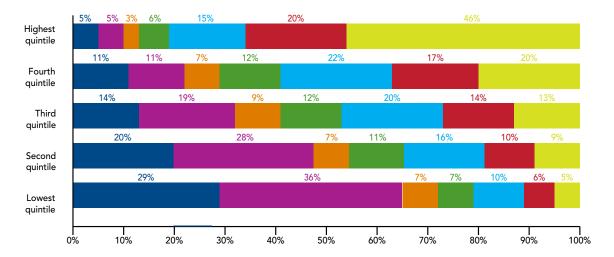|							
Highest quintile	5%	5%	3%	6%	15%	20%	46%
Fourth quintile	11%	11%	7%	12%	22%	17%	20%
Third quintile	14%	19%	9%	12%	20%	14%	13%
Second quintile	20%	28%	7%	11%	16%	10%	9%
Lowest quintile	29%	36%	7%	7%	10%	6%	5%

Figure 1: Median household net worth, 2015.

Source: U.S. Census Bureau, "Wealth, Asset Ownership, & Debt of Households Detailed Tables: 2015," 2020, Table 4, https://www.census.gov/data/tables/2015/demo/wealth/wealth-asset-ownership.html.

It is easy to measure the assets held in bank accounts or the stock market, and feasible to estimate home equity. It is not easy to measure the value of defined benefit pension plans or artwork. So measures of assets will never be complete in the need analysis system—at least absent the imposition of a comprehensive national wealth tax. Nonetheless, totally ignoring assets for all families would lead to a skewed distribution of the aid that extends to a significant number of households in the upper half of the income distribution. The current system for parents of dependent students, under which 12% of discretionary net worth is added to available income before the marginal tax rates are applied, is somewhat arbitrary. It leads to a maximum of 5.6% of assets (beyond the protection allowance) being added into the EFC. This is less than the average annual return to the stock market, and it is not unreasonable that many families could pay this amount for a number of years without diminishing the value of their assets. But this will certainly not be the case for many families with multiple children in college for many years.

Despite the role of assets in differentiating among households, there is a strong argument for protecting some level of assets from consideration in the need analysis formula.

All parents are protected by an education savings and asset protection allowance (ESAPA) that rises with the age of the older parent. Single parents receive about half of the asset protection of married parents. For married couples, the 2020–21 ESAPA starts at $300 and rises with age, reaching $4,900 at 40 and $9,400 for those age 65 or older.[8] Just a year earlier the maximum was $18,900.[9]

The ESAPA, which is based on the age of the older parent, is intended to cover the cost of an annuity that will supplement Social Security retirement benefits to reach the moderate family income level as determined by the

[8] Federal Need Analysis Methodology for the 2020-21 Award Year-Federal Pell Grant, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, William D. Ford Federal Direct Loan, Iraq and Afghanistan Service Grant, and TEACH Grant Programs, *Federal Register* 84, no. 105, (May 31, 2019): https://www.federalregister.gov/documents/2019/05/31/2019-11354/federal-need-analysis-methodology-for-the-2020-21-award-year-federal-pell-grant-federal-work-study

[9] Office of Federal Student Aid, The EFC Formula, 2020-2021, Washington, DC, U.S. Department of Education, 2019, https://ifap.ed.gov/sites/default/files/attachments/efcformulaguide/1920EFCFormulaGuide.pdf

Bureau of Labor Statistics. However, the average Social Security retirement benefit has been increasing while the moderate living standard has remained largely unchanged. As this gap narrows, it causes the allowance to decrease. The ESAPA for a 65-year-old parent has decreased from $84,000 in 2009–10 to $9,400 in 2020–21.[10]

The ESAPA is an example of a provision of the need analysis formula based on reasonable logic but gone awry. It would be much better to adjust the living standard goal by the same Consumer Price Index that determines increases in Social Security benefits. This approach would add stability and predictability to the system.

An alternative would be to reinforce the role of protected savings as preparation for paying for college. As college prices rise, families need higher levels of savings to pay the bills. In the late 1980s and early 1990s, some discussions in the financial aid community centered on the idea that families should save one-third of the amount they would be expected to pay for college, pay one-third during the college years, and borrow the remaining one-third, repaying it out of post-college income. The idea was that families should spread the payments out over 12 years. A concept like this would provide a mechanism for developing an asset protection allowance that increases as college prices rise.

Ignoring Non-Custodial Parents Can Lead to Poor Targeting of Aid

The FM relies on information about both parents' resources, but if parents are divorced, only the resources of the custodial parent count. In the stereotypical case where the father has a high income and the mother, who is not employed, keeps the house in a divorce settlement, neither her asset nor his income affects the EFC. If the mother remarries, the stepparent's resources will be included in the EFC calculation. This clearly provides a disincentive to tie the knot.

The College Board's Institutional Methodology, a more detailed formula used by some colleges and universities to allocate their institutional aid, addresses divorced parents differently, requesting financial information from both biological parents, whether they are married or not. This approach requires an exception process through which a student who has no contact with one of his parents can be treated as the child of a single parent. Many students from low-income families would lose out on need-based aid without such a provision. But ignoring non-custodial parents, as the current FM does, is likely to lead to children from affluent families inappropriately receiving aid.

It is helpful to ask which of these outcomes is more problematic. In the case of Pell Grants, which provide just over $6,000 to low- and moderate-income students and provide the basis for college access for many, it is reasonable to argue that awarding these funds to a small number of students who don't really need them is not too high a price to pay for the program achieving its goals. On the other hand, awarding generous institutional grant aid to these families instead of seeking the necessary information could significantly reduce the resources available for needier students and other institutional priorities. In 2015–16, the parents of 23% of undergraduate students—and 35% of Pell Grant recipients—were divorced or separated.[11] So this issue affects a significant share of financial aid.

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[10] Mark Kantrowitz, "The FAFSA's Asset Protection Allowance Continues to Crash" *Saving for College.com*, (August 9, 2019), https://www.savingforcollege.com/article/the-fafsa-s-asset-protection-allowance-continues-to-crash

[11] National Postsecondary Student Aid Study 2016, Power Stats.

Small Differences in Circumstances Can Lead to Large Differences in Aid Awards

Some provisions of the need analysis methodology require drawing lines for which there is no clear logic. Some of these lines can move without a major impact on large numbers of filers. For example, there are cutoffs of $50,000 for the simplified needs test, which excludes assets from consideration, and of $26,000 for the automatic-zero EFC. The limits could as easily be $40,000 and $20,000 or $60,000 and $30,000. But the critical question is whether there is a cliff effect—i.e., whether applicants just on the other side of the line are treated very differently than they would be if their incomes were a few dollars lower.

Most applicants with significant assets do not qualify for these provisions in any case, so the exclusion of assets through the simplified needs test should have little impact on EFCs. And EFCs from incomes lower than the IPA plus allowances will automatically be zero regardless of the automatic-zero provision. The IPA for a single parent with one child who is in college is $19,080 in 2020–21. Adding a typical allowance for taxes, this type of household with a $26,000 income could end up with an EFC of about $1,000 without this provision. The goal should be to draw the line where most people would begin having a positive EFC under the formula. The idea is to avoid the situation where an extra few dollars of income raises the EFC from $0 to a significantly higher level.

Since $26,000 is about 150% of the poverty line for a family of two, it is logical that the formula should be modified to ensure a zero EFC for families at this income level even without the automatic zero. Setting all income thresholds in the formula relative to the federal poverty line is a potential approach to minimizing the problem of sharp EFC differences resulting from small changes in income.

Negative EFC

Some critics of the need analysis system argue that there should be negative EFCs.[12] The idea is that if a family's income is lower than the income protection allowance, they should have more generous financial aid than those who have just enough income to cover that basic living budget (after allowances for taxes). Under the current system, both families have $0 EFCs.

However, it is hard to accept the logic that a family can contribute less than $0 to their children's education. As long as the calculation yields an "expected contribution," and meeting need requires fully funding the gap between the EFC and the total budget, a negative EFC would suggest that some students should receive aid that exceeds their total cost of attendance.

Of course, financial aid resources are rarely adequate to meet need, and ranking families who currently have a $0 EFC would help to ration those funds in an equitable way. And a related issue is that students from the lowest-income families are most likely to run into unexpected expenses they cannot manage. But an emergency aid fund, rather than a standard provision in the need analysis formula, is best for addressing these situations.

In 2015–16, 43% of undergraduates who completed the FAFSA and an estimated 39% of all undergraduates had $0 EFCs.[13] Two-thirds of Pell Grant recipients, including 82% of independent recipients with dependents, qualified for the maximum Pell Grant because of their $0 EFCs (Table 3). It seems clear that differentiating among these students would increase the equity of the program.

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[12] See, for example, Robert Kelchen, "The Importance of Negative Expected Family Contributions," *Robert Kelchen* (blog), April 3, 2017. https://robertkelchen.com/2017/04/03/the-importance-of-negative-expected-family-contributions/.

[13] The National Postsecondary Student Aid Study estimates incomes and EFCs for non-FAFSA filers based on interviews.

Table 3: Share of Students with $0 EFC

| | Share with $0 EFC | | |
	Pell recipients	FAFSA filers	Undergraduates
All	64%	43%	39%
Dependent	54%	28%	24%
Independent without dependents	64%	46%	42%
Independent with dependents	82%	75%	67%

Source. U.S. Department of Education, *Federal Pell Grant Program End-of-Year Report 2017-18,* 2019, Table 4; National Postsecondary Student Aid Study 2016, Power Stats.

If there were a Pell eligibility index separate from the EFC, it would be possible to rank even the lowest-income households, providing more support for those with the least resources. But this would be possible only if we can accept the idea of some very low-income students not receiving the maximum Pell Grant. It is easier for people to think about giving a "premium" to students in particularly difficult circumstances, but this really amounts to the same thing as raising the maximum award and reserving it for those circumstances.

Under the current FM, negative available income is an allowance against student income as well as against any contribution from assets. This feature effectively allows for a negative EFC in circumstances where the student is working to help support a particularly needy family. But as long as there is a focus on measuring ability to pay to determine what share of a student's need is met by a combination of the family's and student's own resources plus financial aid, the EFC should not go below $0—and households that really do not have the resources to contribute to college education should not have EFCs higher than $0. The problem is that so many households in the nation are in such difficult circumstances—not that the need analysis system is incorrectly assessing their ability to pay. Maintaining $0 as the lowest EFC need not prevent providing the largest Pell Grants to the lowest-income students if a simple Pell Grant award system is distinct from the EFC calculation.

Conclusion

FM is a deeply flawed method for determining Pell Grant eligibility. Pell Grant recipients have very limited resources and considerable research indicates that dramatically simplifying the formula would not have much impact on the awards students receive. There is no doubt that eliminating some of the information currently considered would allow some students to slip through the cracks. This is already the case. For example, those whose families have considerable wealth in the form of home equity or retirement assets and children of divorced parents in families where the non-custodial parent has a high income may be eligible for Pell despite the fact that the program is clearly not designed to support students in their financial situations. But the cost of maintaining a system designed to prevent any non-deserving students from receiving awards is that it becomes complex and difficult to navigate for the students who rely on it. The benefits of a simple Pell Grant system have been well documented.

But Pell Grants are not adequate for making it feasible for most students to finance a range of higher education options. Federal grants (including military and veterans' aid) constitute only about one-third of the grant aid on which undergraduate students rely. Institutions provide 45% of undergraduate grants, states about 10%, and employers and other private sources 11%.[14] Many students from households with far more complicated financial pictures than the typical Pell Grant recipient receive this aid. If these funds are to effectively increase educational opportunities by reducing the inequality of resources available to students, they must be allocated through a need analysis system that can reasonably assess differences in financial capacity.

A strong system would consider more than one year of household income and put less weight on the spacing of families' children. It would better serve independent students without dependents and would more carefully measure assets, protecting a reasonable amount of those assets to encourage families to save in advance for their children's education.

Measuring how much households in different circumstances can afford to pay for college is not a precise science. The formula should incorporate as much economic logic as possible, avoid large gaps in eligibility across households whose circumstances are actually similar, and ask more of those with more real financial capacity. Despite the range of approximations and judgment calls embodied in any formula for measuring how much households can contribute to college expenses, some estimate is necessary if we are to have any sense of the gaps between students' needs and their available resources.

[14] Sandy Baum, Jennifer Ma, Matea Pender, and CJ Libassi, *Trends in Student Aid 2019,* College Board, 2019, https://research.collegeboard.org/trends/student-aid.